Program Copying

Downloadable nonvolatile files

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Program file copying between nodes is often accomplished via the Download Page. This uses Classic protocol with a listype value 76 for both data requests and settings. The ident used for this listype is 14 bytes in length, as follows:

```
RECORD
node: Integer;        { node # }
tNam: Char4;          { type name, such as 'LOOP' }
fNam: Char4;          { file name, such as 'SLOG' }
offs: Longint;        { offset value in bytes }
END;
```

Copying of a file is done is multiple steps, reading from a source node and writing to a target node. This first step is to acquire the contents of the `CODES` table entry corresponding to the file in question. This is done by requesting 32 bytes of data from the source node using the offset value = –1, or `0xFFFFFFFF`. The `CODES` table entry provides the file size, the checksum longword, and the version date (6 bytes in BCD for `YrMoDaHrMnSc`). To start the copy process, make a setting to the target node, using the offset value of –1, passing it 4 bytes of data, which is the file size longword. This will cause the target node to free any old version of the program and allocate the requested size space for the new version, if possible.

The second step is to copy the file content in blocks of some reasonable size, perhaps 1K bytes or so, beginning with an offset value longword of 0, advancing by the block size each time. Read a block from the source node, then write it to the target node.

Following the last block write to the target, perform the last step by writing 10 bytes to the target node, using offset longword value of `0x00000001`. The 10 bytes of data consist of the 4-byte checksum word, followed by the 6-byte version date in BCD, both as obtained from the source node `CODES` table entry. This completes the copy, and the new file version is now installed in the target node.

In the case of a local application, with type name = '`LOOP`', if the local application was already running a previous version when the copy was completed, it will be terminated, and the new version will be started up and initialized automatically. If this is not desired, disable the old local application in the target node before doing the copy.